GAU 2681 #2
9-30-02

Atty. Docket No.: A-70184/RMA

CERTIFICATE OF MAILING (37 CFR 1.8(a))

I hereby certify that this correspondence (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D. C. 20231, on September 18, 2002.

Signature: Karena Moy-Brown
Karena Moy-Brown

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:
Gleb V. Klimovitch

Serial No. 10/024,120
Filed: December 17, 2001

For: SYSTEM, APPARATUS, AND METHOD OF ESTIMATING MULTIPLE-INPUT MULTIPLE-OUTPUT WIRELESS CHANNEL WITH COMPENSATION FOR PHASE NOISE AND FREQUENCY OFFSET

Examiner: Not yet assigned

Group Art Unit: 2681

INFORMATION DISCLOSURE STATEMENT SUBMITTED PRIOR TO THE FIRST OFFICIAL ACTION

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

In accordance with 37 C.F.R. §§ 1.56 and 1.97 through 1.98, applicants wish to make known to the Patent and Trademark Office the reference set forth on the attached form PTO-1449 (copies of the cited references, as required under 37 C.F.R. § 1.98, are enclosed). Although the aforesaid references are made known to the Patent and Trademark Office in compliance with applicant's duty to disclose all information he is aware of which is believed relevant to the examination of the above-identified application, applicant believes that his invention is patentable.

Applicant also wishes to make known to the Patent and Trademark Office that an application, Serial No. 09/678,420, describing and claiming subject matter that is similar to the subject matter of this application, was filed on October 2, 2000. This related application, as well as any prior art cited therein, may be material to the examination of this application. A copy of this related application as filed is submitted herewith in accordance with 37 C.F.R. § 1.98(d).

Applicant also wishes to make known to the Patent and Trademark Office that an application, Serial No. 09/945,134, describing and claiming subject matter that is similar to the subject matter of this application, was filed on August 31, 2001. This related application, as well as any prior art cited therein, may be material to the examination of this application. A copy of this related application as filed is submitted herewith in accordance with 37 C.F.R. § 1.98(d).

This information disclosure statement is being filed in compliance with 37 CFR 1.97(b)(3) as being filed before the mailing date of the first office action on the merits.

This information disclosure statement is being filed in compliance with 37 CFR 1.34(a) giving the undersigned attorney authorization to represent said party.

Please acknowledge receipt of this Information Disclosure Statement and kindly make the cited references of record in the above-identified application.

The Commissioner is authorized to charge any other fees which may be required, or credit any overpayment to Deposit Account No. 50-2319.

Respectfully submitted,

R. Michael Ananian
Registration No. 35,050

DORSEY & WHITNEY LLP
Suite 3400, Four Embarcadero Center
San Francisco, California 94111-4187
Telephone: (650) 494-8700
Facsimile: (650) 494-8771
1046353

Please type a plus sign (+) inside this box ☑+ PTO/SB/8A (08-00) Approved for use through 10/31/2002. OMB 06510031

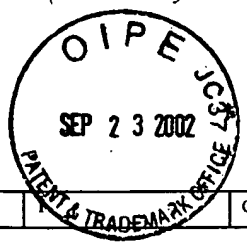
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)



Sheet	1	of	2

Complete if Known

Application Number	10/024,120
Filing Date	December 17, 2001
First Named Inventor	Gleb V. KLIMOVITCH
Group Art Unit	2681
Examiner Name	Not Yet Assigned
Attorney Docket Number	A-70184/RMA (463438-12)

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1	5,282,222		FATTOUCHE et al.	01-25-1994	
	B1	5,305,353		WEERACKODY	04-19-1994	
	C1	5,548,582		BRAJAL et al.	08-20-1996	
	D1	5,592,490		BARRATT et al.	01-07-1997	
	E1	5,768,268		KLEIN et al.	06-16-1998	
	F1	5,960,039		MARTIN et al.	09-28-1999	
	G1	6,058,105		HOCHWALD et al.	05-02-2000	
	H1	6,088,408		CALDERBANK et al.	07-11-2000	
	I1	6,285,720	B1	MARTONE	09-04-2001	
	J1	09/678,420	A	MARTONE	10-2-2000	
	K1	09/945,134	A	MARTONE	08-31-2001	

OTHER DOCUMENTS - NON-PATENT LITERATURE DOCUMENTS

*Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	TRANSLATION YES	TRANSLATION NO
	L1	ALMEIDA, L.B., "The Fractional Fourier Transform and Time-Frequency Representations," *IEEE Transactions on Signal Processing,* Vol. 42, No. 11, pp. 3084-3091, November 1994.		
	M1	BAHAI, R.S. et al., "Chapter 2 - System Architecture", *MultiCarrier Digital Communication,* Plenum Publishers, New York, 1999, pp. 17-39.		
	N1	DIJKERMAN et al., "Wavelet Representations of Stochastic Processes and Multiresolution Stochastic Models", *IEEE Transactions on Signal Processing*, Vol. 42, No. 7, July 1994, pp. 1640-1652.		
	O1	DOROSLOVACKI et al., "Wavelet-Based Linear System Modeling and Adaptive Filtering", *IEEE Transactions on Signal Processing*, Vol. 44, No. 5, May 1996, pp. 1156-1167.		
	P1	FORNEY, G. D., "Maximum-Likelihood Sequence Estimation of Digital Sequences in the Presence of Intersymbol Interference", *IEEE Transactions on Information Theory*, Vol. IT-18, No. 3, May 1972, pp. 363-378.		
	Q1	FOSCHINI, G.J., "Layered Space-Time Architecture for Wireless Communication in a Fading Environment When Using Multiple Antenna Elements," *Bell Labs Tech. J.,* Vol. 1, No. 2, pp. 41-59, 1996.		
	R1	GIANNAKIS et al., "Basis Expansion Models and Diversity Techniques for Blind Identification and Equalization of Time-Varying Channels", *Proceedings of the IEEE*, Vol. 86, No. 10, October 1998, pp. 1969-1986.		

Examiner Signature		Date Considered	

Please type a plus sign (+) inside this box ☑+ PTO/SB/8A (08-00) Approved for use through 10/31/2002. OMB 06510031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known

Application Number	10/024,120
Filing Date	December 17, 2001
First Named Inventor	Gleb V. KLIMOVITCH
Group Art Unit	2681
Examiner Name	Not Yet Assigned
Sheet 2 of 2	Attorney Docket Number A-70184/RMA (463438-12)

OTHER DOCUMENTS - NON-PATENT LITERATURE DOCUMENTS

*Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	TRANSLATION YES	TRANSLATION NO
	S1	KUTAY, M.A. et al., "Optimal Filtering in Fractional Fourier Domains," *IEEE Transactions on Signal Processing,* Vol. 45, pp. 1129-1143, May 1997.		
	T1	MARTONE, M., "Cumulant-Based Adaptive Multichannel Filtering for Wireless Communication Systems with Multipath RF Propagation Using Antenna Arrays", *IEEE Transactions on Vehicular Technology*, Vol. 47, No. 2, May 1998, pp. 377391.		
	U1	MARTONE, M., "An Adaptive Algorithm for Antenna Array Low-Rank Processing in Cellular TDMA Base Stations", *IEEE Transactions on Communications*, Vol. 46, No. 5, May 1998, pp. 627-643.		
	V1	MARTONE, M., "On MMSE Real-Time Antenna Array Processing Using Fourth-Order Statistics in the U.S. Cellular TDMA System", *IEEE Journal on Selected Areas in Communications*, Vol. 16, No. 8, October 1998, pp. 1396-1410.		
	W1	OZATAKAS, H.M. et al., "Digital Computation of the Fractional Fourier Transform, " *IEEE Transactions on Signal Processing,* Vol. 44, pp. 2141-2150, September 1996.		
	X1	PROAKIS, J.G., "Chapter 10-Communication Through Band-Limited Linear Filter Channels", *Digital Communications*, Third Edition, McGraw Hill, pp. 583-601.		
	Y1	RIOUL, O., "A Discrete-Time Multiresolution Theory", *IEEE Transactions on Signal Processing*, Vol. 41, No. 8, August 1993, pp. 2591-2606.		
	Z1	STRANG et al., "Chapter 3-The Noble Identities", *Wavelets and Filterbanks*, Wellesley-Cambridge Press, 1996, pp. 100-102.		
	A2	STRANG et al., "Chapter 6-Multiresolution", *Wavelets and Filterbanks*, Wellesley-Cambridge Press, 1996, pp. 174-219.		
	B2	VAN NEE, R. et al., "Chapter 5 – Coherent and Differential Detection", *OFDM for Wireless Multimedia Communications,* Artech House Publishers, Boston and London, 2000, pp. 95-117.		
	C2	ZHANG et al., "A Wavelet-Based KL-Like Expansion for Wide-Sense Stationary Random Processes", *IEEE Transactions on Signal Processing*, Vol. 42, No. 7, July 1994, pp. 1737-1745.		
	D2			

Examiner Signature		Date Considered	

1046353